Remarks

Claims 1-20 are pending in this application. Claims 1-20 were rejected under 35 U.S.C. 112, second paragraph. Claims 1-3, 5-6, 8-10, 12-13, and 20 were rejected under 35 U.S.C. 102(e) as being anticipated by Deng et al. (U.S. Pub. No. 2002/0196491). Claims 7, 14-16, and 18-19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Deng. Claims 4, 11, and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Deng in view of Applicants' admitted prior art.

Independent claims 1, 8, and 15 have been amended to more particularly point out the invention. The invention is believed to be patentable.

Regarding the rejection of claims 1-20 under 35 U.S.C. 112, second paragraph, claims 1, 8, and 15 have been amended to clarify the optical signal. More specifically, the claims now recite that the head end modulator produces a modulated optical signal that directly drives the network fiber node. The optical signal is modulated by a radio frequency signal, wherein the radio frequency signal composes the HFC forward path spectrum and includes a plurality of channel slots, and wherein the radio frequency signal carries the switchable digital data signal in the plurality of channel slots. Applicants respectfully request that the Examiner withdraw the rejection under 35 U.S.C. 112, second paragraph.

Regarding the rejections under 35 U.S.C. 102(e) and 35 U.S.C. 103(a), each of these rejections relies on Deng. The amended claims recite that the head end modulator produces a modulated optical signal that directly drives the network fiber node. This optical signal is modulated by a radio frequency signal, wherein the radio frequency signal composes the HFC forward path spectrum and includes a plurality of channel slots, and wherein the radio frequency signal carries the switchable digital data signal in the plurality of channel slots. Deng does not describe these features, and claims 1-20 are believed to be patentable as further explained below.

Claim 1, for example, recites an apparatus for use in a hybrid fiber coax (HFC) network to provide an HFC forward path spectrum from the head end to a network fiber node. The apparatus comprises a head end modulator. The head end modulator directly receives a switchable digital data signal and internally processes the switchable digital data signal to produce a modulated optical signal that directly drives the network fiber node. The optical signal is modulated by a radio frequency signal. The radio frequency signal composes the HFC forward path spectrum and includes a plurality of channel slots. The radio frequency signal carries the switchable digital data signal in the plurality of channel slots.

Deng describes a passive optical network that uses coarse wavelength division multiplexing. Figure 4 illustrates a hybrid passive optical network employing wavelength division multiplexing. Upstream node 102 is configured as a central office and exchanges communication signals with a metropolitan area network via a multiplexor and associated digital cross-connect 106.

Deng fails to suggest a head end modulator directly receiving a switchable digital data signal and the production, at the headend modulator, of a modulated optical signal directly driving the network fiber node, with the optical signal being modulated by a radio frequency signal which composes the HFC forward path spectrum and includes a plurality of channel slots, and wherein the radio frequency signal carries the switchable digital data signal in the plurality of channel slots as now recited in each independent claim.

In the office action mailed September 6, 2006, the Examiner directs attention to Deng, Figure 4, and optical signals λ_1-λ_4 produced using the CWDM lasers. The Examiner notes that the signals from digital cross-connect 106 are electrical signals and states that these signals are RF signals, and directs attention to paragraph 0026. At most, Deng describes conversion from optical, to electrical, and back to optical — there is no suggestion of the claimed feature of an optical signal modulated by an RF signal that carries a digital data signal. Although Deng may describe electrical to optical conversion, the claimed features are not described or suggested by Deng. **Specifically, Deng offers no teaching of the claimed**

optical signal modulated with a radio frequency signal which includes a plurality of channel slots that carry a switchable digital data signal (that is received directly by the head end modulator).

The optical signals λ_1-λ_4 shown in Figure 4 of Deng do not suggest the claimed invention. Deng only relates to signal processing in the optical domain, does not relate to digital and radio frequency domain signals, and does not suggest the claimed invention. The Examiner directs attention to paragraph 0026 in Deng; however, paragraph 0026 only mentions that the signals exchanged between upstream node 102 and the metropolitan area network may be converted from optical to electrical and back to optical again. Aside from this, Deng only relates to signal processing in the optical domain, and does not relate to digital and radio frequency domain signals, let alone make any suggestion of the specifically claimed features.

In summary, the signal that is modulated onto the optical signal in Deng is not a radio frequency signal carrying the switchable digital data received by the headend modulator as recited by claim 1. Applicants respectfully request that the Examiner allow claims 1-20. Please charge any additional fees or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978.

Respectfully submitted,
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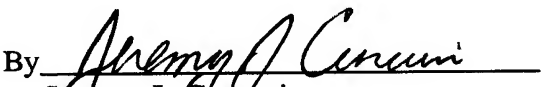
By 
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